

EDITORIAL

The Outbreak of Meningitis

THERE ARE MANY MATTERS of great interest in the report on meningococcus infections at Ford Ord in California, by Brown and Condit, which appears in this issue. Happily, this will dispel some of the misapprehensions which have prevailed, although it also suggests the necessity of reevaluation of some old concepts.

Most obviously, this disease is a contact infection and its spread by fomites and similar agents may reasonably be exonerated (blankets, mattresses and the like have received a great deal of attention in this respect). Exposure alone cannot be the reason for clinical disease, because positive throat cultures are found in ± 20 per cent of the general population, including those before induction into the Armed Services, in University populations and in a variety of civilians without regard to their location in the State. Repeated cultures of the throat seem to indicate that a transient carrier state may occur from time to time in nearly 100 per cent of the population. The *Neisseria* may be regarded as an occasional component of the normal oral flora just as are other organisms which are, from time to time, pathogenic.

Opportunities for infection are thus almost universal; many individuals may become immune by virtue of repeated exposure. Special conditions of increased host susceptibility may well be the most important cause of disease when there is almost a constant opportunity for exposure to so ubiquitous a pathogen. Young children are most commonly affected but late adolescent recruits may simply present similar degrees of special susceptibility. Topley and Wilson,* the most recent authoritative

text of bacteriology and immunology, states: "Fatigue exerts a powerful influence; it is the recruits, unaccustomed to the rigours of military life, who furnish the greater number of cases in the Army. Dopter (1921) tells an impressive story of a party of recruits who made a long fatiguing march to join their regiment at Versailles. On reaching their destination cerebrospinal fever broke out and of 153 men no fewer than 79 were attacked."

The communication by Brown and Condit in this issue of CALIFORNIA MEDICINE (page 171) deserves careful study. Recent seasonal incidence has been in summertime and not, as usually occurs, in winter. Type B, and not Type A which is the strain most frequent in epidemics, has been the prevailing strain recently in carriers and in cases of the disease in California.

The reason for sulfonamide resistance, which was unknown before 1962, provokes speculation regarding possible cause. Conceivably, it is from the widespread prophylactic use of the drug in a circumscribed population.

It should be carefully noted that two-thirds of the strains found in civilians are still sensitive to sulfonamide. The use of sulfonamide in treatment should not be abandoned but the drug should be combined with large doses of penicillin. The previously quoted Topley and Wilson states: "The routine treatment for the ordinary form of disease is by sulfonamides. Penicillin is less effective." It should not be forgotten that, previously, a few strains have been shown to be resistant to penicillin.

The indiscriminate use of either penicillin or sulfonamides for prophylaxis *may* be provocative of further and even more sinister problems of resistance.

The problems of infection, therapy and the appearance of resistant organisms bear striking resemblance to recent similar problems with the ubiquitous staphylococcus. The same situation is to be expected in the future with still other organisms.

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*Topley and Wilson's *Principles of Bacteriology and Immunity*. By Sir Graham S. Wilson and A. A. Miles, 5th ed., Williams & Wilkins Co., Baltimore, 1964.